

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: NEO-RAY

Report Number: P331280-935

Luminaire Tested: **S122DIP-S290D1080U935-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331280-935  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-8,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S122DIP-S290D1080U935-4F0-1E-UDD-D1  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1080 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4348.2 lumens  
Efficiency: N/A  
Efficacy: 103.0 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.32 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect

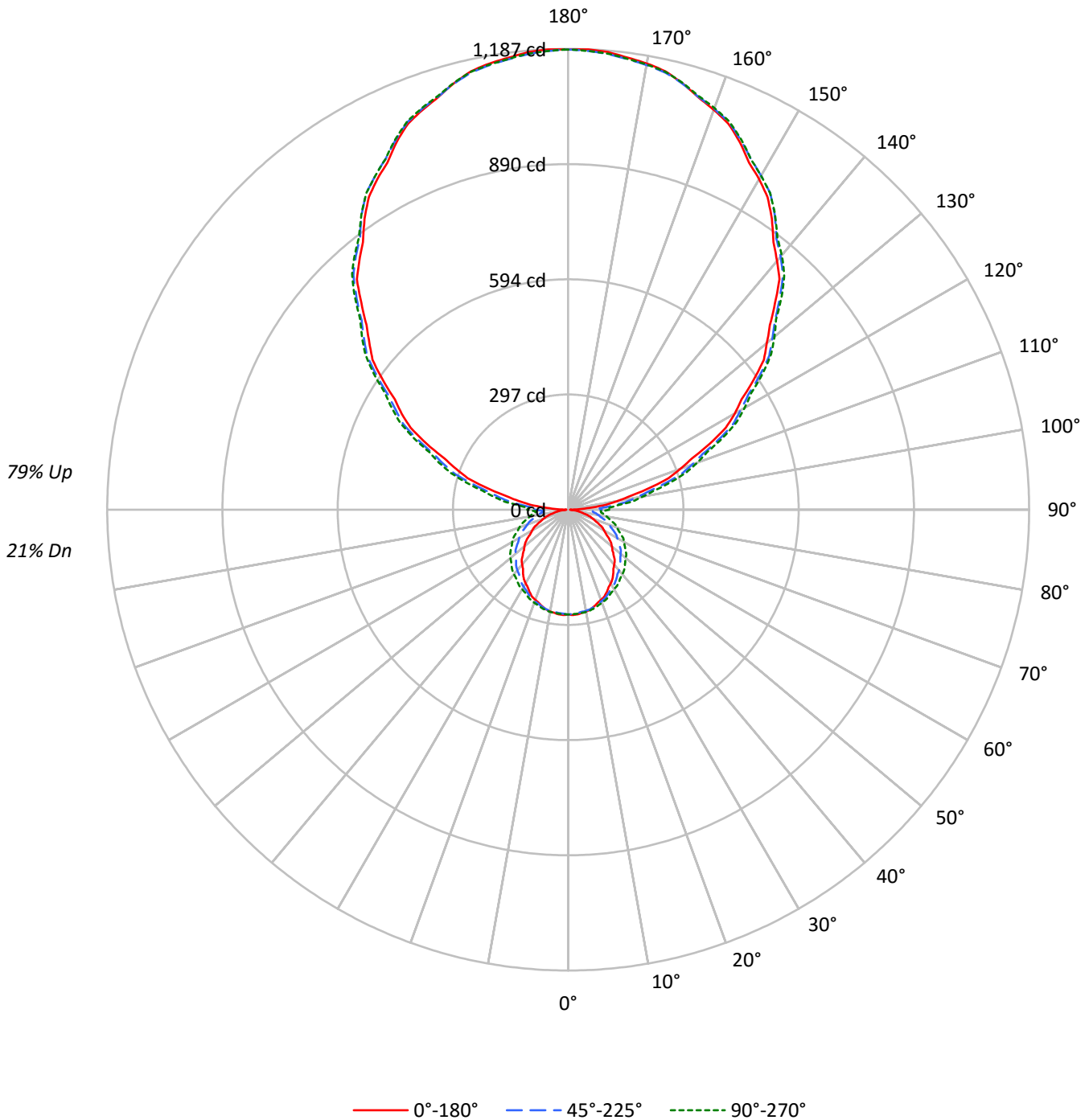
Input Watts (W): 42.2  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P331280-935

CATALOG NUMBER: S122DIP-S290D1080U935-4F0-1E-UDD-D1

### Luminous Intensity Polar Plot





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CATALOG NUMBER: S122DIP-S290D1080U935-4F0-1E-UDD-D1

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20					20					20					20	
RC	80					70					50					30					10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0	
RCR																						
0	100	100	100	100	89	89	89	89	67	67	67	48	48	48	30	30	30	21				
1	91	86	82	79	80	76	73	70	58	56	54	41	39	38	25	24	24	16				
2	82	75	69	64	72	66	61	57	50	47	44	35	33	31	22	20	19	13				
3	75	66	58	53	66	58	52	47	44	40	36	31	28	26	19	17	16	11				
4	68	58	50	44	60	51	45	40	39	34	31	27	24	22	17	15	14	9				
5	62	51	43	37	55	45	39	34	35	30	26	24	21	19	15	13	12	8				
6	57	46	38	32	50	41	34	29	31	26	23	22	19	16	14	12	10	7				
7	53	41	33	28	46	36	30	25	28	23	20	20	17	14	12	10	9	6				
8	49	37	29	24	43	33	26	22	25	21	17	18	15	13	11	9	8	5				
9	45	34	26	21	40	30	24	19	23	18	15	16	13	11	10	9	7	5				
10	42	31	24	19	37	27	21	17	21	17	14	15	12	10	10	8	6	4				

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	4358	4358	4358
5°	4379	4195	4179
10°	4352	4070	4026
15°	4290	3939	3863
20°	4215	3798	3707
25°	4141	3663	3565
30°	4034	3524	3423
35°	3928	3389	3323
40°	3818	3275	3223
45°	3709	3172	3137
50°	3596	3079	3053
55°	3474	2979	2968
60°	3329	2876	2878
65°	3174	2756	2769
70°	3001	2623	2653
75°	2784	2499	2544
80°	2445	2366	2436
85°	2110	2255	2350



TEST NUMBER: P331280-935

CATALOG NUMBER: S122DIP-S290D1080U935-4F0-1E-UDD-D1

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	25.6	0.6
10°-20°	73.3	1.7
20°-30°	111.1	2.6
30°-40°	135.3	3.1
40°-50°	145.6	3.3
50°-60°	141.4	3.3
60°-70°	123.5	2.8
70°-80°	95.1	2.2
80°-90°	68.5	1.6
90°-100°	119.0	2.7
100°-110°	265.3	6.1
110°-120°	419.9	9.7
120°-130°	536.1	12.3
130°-140°	593.4	13.6
140°-150°	577.9	13.3
150°-160°	484.0	11.1
160°-170°	321.0	7.4
170°-180°	112.2	2.6
0°-30°	210.0	4.8
0°-40°	345.4	7.9
0°-60°	632.4	14.5
0°-90°	919.4	21.1
90°-120°	804.3	18.5
90°-150°	2511.7	57.8
90°-180°	3429.0	78.9
0°-180°	4348.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	270	270	270	270	270	
5°	271	269	267	269	269	26
15°	258	259	259	262	262	73
25°	235	237	241	245	247	108
35°	202	209	216	225	228	126
45°	166	177	190	202	206	128
55°	127	142	162	175	181	114
65°	87	106	129	145	150	86
75°	48	70	95	111	117	51
85°	14	38	63	79	85	15
90°	5	40	87	100	106	5
95°	55	83	109	123	127	62
105°	217	232	254	269	274	229
115°	402	412	428	438	440	397
125°	583	592	601	609	612	521
135°	754	764	770	777	778	582
145°	914	921	927	930	928	571
155°	1045	1048	1051	1056	1053	481
165°	1137	1136	1136	1142	1138	321
175°	1183	1180	1178	1184	1179	112
180°	1185	1185	1185	1185	1185	



TEST NUMBER: P331280-935

CATALOG NUMBER: S122DIP-S290D1080U935-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9
2.5°	271.5	271.2	271.0	270.8	270.6	270.3	269.8	269.3	268.8	268.3	268.6
5°	270.7	270.4	270.2	269.9	269.6	269.2	268.7	268.2	267.7	267.2	267.7
7.5°	268.2	268.0	267.9	267.7	267.5	267.3	266.8	266.5	266.0	265.6	266.3
10°	266.4	266.2	266.0	265.9	265.7	265.4	265.2	264.9	264.7	264.4	265.1
12.5°	263.2	263.3	263.3	263.4	263.4	263.3	263.1	262.9	262.7	262.5	263.2
15°	258.1	258.3	258.5	258.6	258.8	258.9	258.9	258.9	258.9	258.9	259.7
17.5°	251.6	251.9	252.3	252.7	253.0	253.4	253.7	253.9	254.2	254.5	255.3
20°	247.2	247.6	248.1	248.5	248.9	249.3	249.7	250.0	250.4	250.7	251.7
22.5°	242.5	243.0	243.5	244.0	244.5	245.0	245.5	246.0	246.5	246.9	247.9
25°	234.7	235.3	235.9	236.5	237.1	237.8	238.6	239.4	240.1	240.9	241.9
27.5°	225.3	226.3	227.3	228.3	229.3	230.2	231.1	232.0	233.0	233.9	235.2
30°	219.0	220.2	221.3	222.4	223.5	224.7	225.8	227.0	228.1	229.2	230.6
32.5°	212.2	213.4	214.6	215.9	217.2	218.5	219.9	221.2	222.6	223.9	225.5
35°	202.2	203.7	205.2	206.6	208.1	209.7	211.4	213.0	214.6	216.3	218.2
37.5°	191.4	193.1	194.8	196.6	198.2	200.2	202.3	204.4	206.6	208.7	210.9
40°	184.3	186.1	188.0	189.9	191.8	194.0	196.3	198.7	201.0	203.4	205.6
42.5°	177.4	179.3	181.2	183.0	185.0	187.3	190.0	192.7	195.4	198.0	200.5
45°	165.8	168.2	170.6	172.9	175.2	177.9	181.0	184.0	187.0	190.1	192.8
47.5°	154.5	157.0	159.6	162.1	164.7	167.8	171.3	174.9	178.5	182.0	184.9
50°	146.7	149.4	152.1	154.7	157.5	160.7	164.7	168.6	172.5	176.4	179.3
52.5°	139.1	142.0	144.8	147.7	150.5	153.9	158.1	162.2	166.3	170.5	173.5
55°	127.1	130.3	133.4	136.5	139.7	143.4	148.0	152.5	157.0	161.5	164.7
57.5°	115.2	118.7	122.3	125.8	129.3	133.4	138.0	142.6	147.2	151.9	155.2
60°	106.8	110.6	114.3	118.0	121.7	126.1	131.0	136.0	140.9	145.9	149.2
62.5°	99.3	103.1	107.0	110.9	114.8	119.2	124.2	129.1	134.1	139.1	142.5
65°	86.8	91.1	95.3	99.6	103.8	108.6	113.7	118.8	124.0	129.1	132.7
67.5°	75.4	79.9	84.3	88.8	93.2	98.1	103.3	108.6	113.8	119.1	122.7
70°	67.2	71.8	76.3	80.8	85.3	90.3	95.7	101.1	106.5	111.8	115.6
72.5°	59.8	64.4	69.1	73.7	78.4	83.4	88.9	94.4	99.9	105.3	109.0
75°	48.1	53.0	57.9	62.7	67.6	72.8	78.4	83.9	89.5	95.1	98.8
77.5°	36.9	41.9	47.0	52.1	57.3	62.6	68.3	73.9	79.6	85.2	88.9
80°	29.4	34.6	40.0	45.2	50.5	56.1	61.6	67.3	72.9	78.6	82.2
82.5°	23.1	28.3	33.6	38.7	44.0	49.5	55.2	61.0	66.6	72.3	76.0
85°	14.1	19.5	24.9	30.2	35.6	41.1	46.7	52.3	57.8	63.4	67.0
87.5°	7.8	13.6	19.3	25.0	30.7	36.9	43.4	49.9	56.5	63.0	66.5
90°	4.9	12.7	20.3	28.1	35.7	44.9	55.3	65.7	76.2	86.6	89.6
92.5°	21.4	28.1	34.7	41.3	48.0	54.6	61.0	67.6	74.1	80.6	84.1
95°	55.1	61.5	67.8	74.0	80.3	86.4	92.0	97.6	103.3	109.0	112.3
97.5°	97.7	103.3	108.9	114.5	120.1	125.8	131.6	137.5	143.4	149.2	152.5
100°	129.8	134.7	139.7	144.7	149.7	155.0	160.5	166.1	171.6	177.1	180.4
102.5°	163.1	167.4	171.8	176.2	180.5	185.5	191.1	196.6	202.2	207.8	211.0
105°	217.0	220.2	223.3	226.5	229.7	233.8	238.8	243.7	248.7	253.7	257.2
107.5°	271.7	274.7	277.7	280.7	283.7	287.3	291.7	296.0	300.3	304.6	307.7
110°	306.6	309.7	312.7	315.8	318.9	322.5	326.8	331.1	335.4	339.6	342.3



TEST NUMBER: P331280-935

CATALOG NUMBER: S122DIP-S290D1080U935-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	345.0	347.8	350.6	353.4	356.2	359.6	363.4	367.3	371.1	375.0	377.3
115°	401.7	403.9	406.2	408.5	410.8	413.6	417.2	420.6	424.0	427.5	429.9
117.5°	457.6	460.0	462.4	464.9	467.3	469.7	472.0	474.4	476.7	479.1	481.1
120°	495.2	497.4	499.5	501.6	503.8	505.7	507.4	509.0	510.7	512.5	514.9
122.5°	529.6	531.9	534.2	536.5	538.7	540.9	542.9	544.9	546.9	549.0	550.8
125°	582.9	584.9	586.9	588.8	590.8	592.9	595.0	597.1	599.3	601.4	603.0
127.5°	635.1	637.5	640.0	642.4	644.9	646.8	648.2	649.7	651.1	652.6	653.9
130°	667.9	670.6	673.5	676.2	679.1	681.1	682.5	683.9	685.3	686.6	688.4
132.5°	704.6	707.0	709.2	711.4	713.8	715.7	717.1	718.6	720.1	721.6	722.6
135°	753.5	756.0	758.4	760.8	763.3	765.2	766.5	767.8	769.0	770.4	772.0
137.5°	805.3	807.3	809.3	811.2	813.2	814.7	815.6	816.6	817.6	818.6	819.9
140°	836.5	838.4	840.3	842.2	844.1	845.8	847.1	848.3	849.6	850.9	852.3
142.5°	868.5	870.4	872.4	874.3	876.2	877.5	878.3	879.1	879.9	880.6	881.9
145°	914.1	915.7	917.2	918.8	920.3	921.8	923.1	924.5	925.7	927.1	927.9
147.5°	955.1	957.0	958.8	960.7	962.6	964.0	964.8	965.8	966.6	967.5	968.1
150°	983.1	984.5	985.8	987.1	988.4	989.5	990.5	991.4	992.2	993.2	993.8
152.5°	1007.9	1009.3	1010.6	1011.9	1013.2	1014.4	1015.5	1016.6	1017.7	1018.7	1019.6
155°	1045.2	1045.8	1046.5	1047.1	1047.8	1048.4	1049.1	1049.8	1050.5	1051.1	1052.2
157.5°	1076.9	1077.4	1077.8	1078.2	1078.7	1079.1	1079.5	1080.0	1080.3	1080.7	1082.3
160°	1096.1	1096.6	1097.0	1097.4	1097.9	1098.2	1098.5	1098.7	1098.9	1099.2	1100.4
162.5°	1113.7	1113.8	1113.9	1114.0	1114.1	1114.2	1114.5	1114.7	1114.9	1115.2	1116.6
165°	1137.1	1137.0	1136.7	1136.4	1136.3	1136.2	1136.2	1136.2	1136.2	1136.2	1137.7
167.5°	1156.8	1156.1	1155.4	1154.8	1154.1	1153.7	1153.7	1153.7	1153.6	1153.6	1155.1
170°	1167.2	1166.5	1165.8	1165.1	1164.5	1164.1	1163.8	1163.6	1163.4	1163.1	1164.7
172.5°	1174.3	1173.7	1173.0	1172.3	1171.6	1171.2	1171.0	1170.8	1170.5	1170.4	1171.9
175°	1183.2	1182.5	1181.8	1181.1	1180.5	1179.9	1179.5	1179.1	1178.6	1178.1	1179.7
177.5°	1186.7	1186.2	1185.7	1185.2	1184.6	1184.1	1183.8	1183.4	1183.1	1182.8	1183.8
180°	1185.2	1185.2	1185.2	1185.2	1185.2	1185.2	1185.2	1185.2	1185.2	1185.2	1185.2



TEST NUMBER: P331280-935

CATALOG NUMBER: S122DIP-S290D1080U935-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9
2.5°	269.0	269.3	269.7	269.8	269.7	269.5	269.4	269.2
5°	268.2	268.7	269.2	269.4	269.3	269.2	269.1	269.1
7.5°	266.9	267.5	268.2	268.5	268.4	268.3	268.2	268.1
10°	265.8	266.5	267.2	267.5	267.4	267.3	267.3	267.2
12.5°	263.9	264.6	265.3	265.6	265.5	265.4	265.4	265.3
15°	260.5	261.3	262.1	262.4	262.3	262.3	262.2	262.1
17.5°	256.1	256.9	257.7	258.1	258.1	258.1	258.1	258.1
20°	252.6	253.6	254.5	255.0	255.0	255.0	255.0	255.0
22.5°	248.9	249.9	250.8	251.3	251.5	251.6	251.8	251.9
25°	243.1	244.1	245.1	245.7	246.0	246.2	246.5	246.8
27.5°	236.5	237.9	239.2	240.0	240.1	240.3	240.5	240.7
30°	232.0	233.4	234.8	235.6	235.8	236.1	236.3	236.6
32.5°	227.0	228.7	230.3	231.4	231.8	232.3	232.7	233.2
35°	220.2	222.1	223.9	225.2	225.8	226.4	227.0	227.6
37.5°	212.9	215.1	217.2	218.6	219.2	219.9	220.5	221.1
40°	207.9	210.2	212.4	214.0	214.7	215.5	216.3	217.1
42.5°	203.0	205.4	207.9	209.6	210.3	211.1	211.9	212.7
45°	195.4	198.2	200.9	202.7	203.5	204.4	205.3	206.1
47.5°	187.7	190.5	193.3	195.2	196.1	197.1	198.0	199.0
50°	182.3	185.3	188.2	190.2	191.1	192.1	193.0	194.0
52.5°	176.5	179.5	182.5	184.6	185.6	186.7	187.7	188.6
55°	167.8	170.9	174.1	176.2	177.3	178.5	179.6	180.7
57.5°	158.6	162.0	165.3	167.6	168.8	169.9	171.0	172.2
60°	152.5	155.8	159.1	161.4	162.6	163.8	165.1	166.3
62.5°	146.0	149.6	153.1	155.4	156.5	157.6	158.9	160.0
65°	136.2	139.7	143.4	145.7	146.8	147.9	149.0	150.2
67.5°	126.2	129.8	133.5	135.9	137.0	138.2	139.4	140.6
70°	119.3	123.0	126.8	129.2	130.3	131.3	132.3	133.4
72.5°	112.6	116.3	119.9	122.4	123.6	124.9	126.2	127.4
75°	102.5	106.2	110.0	112.4	113.6	114.7	115.8	116.9
77.5°	92.6	96.3	100.0	102.5	103.8	105.0	106.2	107.4
80°	85.9	89.5	93.2	95.7	96.9	98.1	99.3	100.5
82.5°	79.6	83.3	87.0	89.4	90.5	91.7	92.8	93.9
85°	70.7	74.3	78.0	80.4	81.6	82.8	84.0	85.2
87.5°	69.9	73.4	76.8	79.1	80.3	81.5	82.7	83.8
90°	92.7	95.7	98.8	100.9	102.2	103.4	104.7	106.0
92.5°	87.6	91.1	94.6	96.9	98.0	99.1	100.1	101.3
95°	115.6	118.9	122.2	124.2	124.8	125.4	126.0	126.6
97.5°	155.7	158.9	162.1	164.2	165.1	166.2	167.1	168.2
100°	183.6	186.8	190.0	192.0	192.7	193.5	194.2	194.9
102.5°	214.4	217.7	221.0	223.1	223.8	224.5	225.2	226.0
105°	260.6	264.2	267.6	269.8	270.8	271.7	272.7	273.6
107.5°	310.8	313.9	317.0	318.6	318.5	318.4	318.4	318.3
110°	345.2	347.9	350.7	352.2	352.6	352.8	353.1	353.4





TEST NUMBER: P331280-935

CATALOG NUMBER: S122DIP-S290D1080U935-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	379.5	381.8	384.0	385.4	385.8	386.3	386.8	387.2
115°	432.3	434.6	437.0	438.4	438.7	438.9	439.3	439.5
117.5°	483.2	485.3	487.2	488.4	488.6	488.9	489.0	489.3
120°	517.3	519.8	522.2	523.6	523.8	524.1	524.4	524.7
122.5°	552.7	554.5	556.3	557.4	557.7	558.0	558.4	558.7
125°	604.8	606.4	608.1	609.2	609.8	610.4	610.9	611.5
127.5°	655.3	656.6	658.0	658.7	658.8	658.8	658.8	658.9
130°	690.0	691.6	693.3	694.0	693.8	693.6	693.4	693.2
132.5°	723.7	724.7	725.7	726.3	726.3	726.3	726.3	726.3
135°	773.6	775.2	776.8	777.7	777.7	777.7	777.7	777.7
137.5°	821.4	822.8	824.2	824.8	824.5	824.1	823.9	823.6
140°	853.7	855.1	856.4	857.0	856.6	856.3	855.8	855.5
142.5°	883.2	884.5	885.8	886.2	885.8	885.4	884.9	884.5
145°	928.6	929.4	930.1	930.2	929.8	929.4	928.8	928.4
147.5°	968.6	969.2	969.7	969.7	969.1	968.5	967.8	967.2
150°	994.5	995.1	995.8	995.8	995.1	994.5	993.8	993.2
152.5°	1020.5	1021.2	1022.1	1022.1	1021.2	1020.5	1019.6	1018.7
155°	1053.3	1054.5	1055.6	1055.8	1055.2	1054.5	1053.8	1053.1
157.5°	1083.7	1085.3	1086.8	1087.0	1085.9	1084.9	1083.8	1082.7
160°	1101.8	1103.1	1104.5	1104.7	1103.8	1102.9	1102.0	1101.1
162.5°	1118.2	1119.6	1121.2	1121.4	1120.3	1119.3	1118.2	1117.1
165°	1139.3	1140.8	1142.4	1142.5	1141.5	1140.4	1139.3	1138.2
167.5°	1156.7	1158.2	1159.8	1159.9	1158.8	1157.6	1156.5	1155.4
170°	1166.2	1167.8	1169.3	1169.5	1168.1	1166.8	1165.4	1164.2
172.5°	1173.5	1175.0	1176.6	1176.6	1175.4	1174.0	1172.7	1171.3
175°	1181.3	1182.8	1184.4	1184.5	1183.2	1181.8	1180.5	1179.1
177.5°	1184.9	1185.9	1187.0	1187.0	1185.9	1184.9	1183.8	1182.8
180°	1185.2	1185.2	1185.2	1185.2	1185.2	1185.2	1185.2	1185.2

(END OF REPORT)